



Jefferson Lab Alignment Group

Data Transmittal

TO: F. Martin, B. Miller, J. Matalovich

DATE: 20 Oct 2015

FROM: Kelly Tremblay

Checked: CG

: B1677

DETAILS:

data: \layout\hallb\151016a

The data below shows various locations that were located on the Hall B space frame to assist in placing the cryogenic components. This survey was carried out Oct. 16th, 2015. All units, unless noted are millimeters.

Two points were received from Floyd Martin to locate on 2nd deck ceiling and 3rd deck. The points were called Torus Service Tower Point and Distribution Can Point.

| Point | X[mm] | Y[mm] | Z[mm] |
|---------------------------------|---------|--------|---------|
| Ideal Deck Points | | | |
| Dist Can | -2464.7 | 4723.2 | -7367.4 |
| Tower | -2464.7 | 4723.4 | -4013.2 |
| Check to 2nd deck layout | | | |
| Dist Can | -2464.8 | 1436.1 | -7367.6 |
| Tower | -2464.5 | 1424.9 | -4013.0 |
| Check to 3RD deck layout | | | |
| Dist Can | -2464.6 | 4744.0 | -7367.6 |
| Tower | -2464.6 | 4721.4 | -4013.3 |

The two cryogenic lines were located at their respective ends. The coordinates for the center, a point upstream and the radii are shown below:

| Circle Pairs | | | | |
|---------------------|----------|----------|----------|---------------|
| | x | y | z | Radius |
| TFLine | -2942.2 | 4174.5 | -8258.1 | 84.4 |
| TFLine_us | -3113.0 | 4178.0 | -8504.8 | |
| | | | | |
| Qhead_BP | -1751.6 | 4115.5 | -8200.5 | 109.3 |
| Qhead_us | -2028.8 | 4127.1 | -8616.5 | |

As directed by Floyd, the survey crew located various I beams on the space frame. The line ends are shown below.

| Point | X [mm] | Y [mm] | Z [mm] | | | | dist[mm] |
|--------------------------------|---------|--------|---------|----------|---------|---------|----------|
| LBBZ_3RD DECK BLUE BEAM | | | | | | | |
| Begin | -1555.5 | 6160.9 | -3429.9 | i | j | k | dist |
| End | -3520.9 | 6161.5 | -3429.5 | -1.00000 | 0.00031 | 0.00019 | 1965.3 |

| Point | X [mm] | Y [mm] | Z [mm] | | | | dist[mm] |
|---|---------|--------|---------|----------|----------|----------|----------|
| TBB_3RD DECK BLUE BEAM | | | | | | | |
| Begin | -2627.9 | 6850.0 | -3430.8 | i | j | k | dist |
| End | -1612.5 | 6849.2 | -3431.5 | 1.00000 | -0.00077 | -0.00071 | 1015.5 |
| LBB_3RD DECK BLUE BEAM | | | | | | | |
| Begin | -3544.1 | 6143.6 | -3418.9 | i | j | k | dist |
| End | -1680.3 | 6139.1 | -3411.8 | 0.99999 | -0.00241 | 0.00383 | 1863.8 |
| TBBY_3RD DECK BLUE BEAM | | | | | | | |
| Begin | -1588.7 | 6868.7 | -3393.7 | i | j | k | dist |
| End | -2722.7 | 6871.2 | -3401.2 | -0.99998 | 0.00218 | -0.00662 | 1134.0 |
| 2ND DECK YELLOW IBEAM | | | | | | | |
| Begin | -2562.9 | 4516.7 | -4407.1 | i | j | k | dist |
| End | -2103.1 | 4516.3 | -4409.3 | 0.99999 | -0.00100 | -0.00466 | 459.8 |
| FBIRY_2ND DECK BEAMRIGHT IBEAMS | | | | | | | |
| Begin | -3034.9 | 4425.1 | -7969.3 | i | j | k | dist |
| End | -3017.5 | 4405.8 | -4067.7 | 0.00446 | -0.00496 | 0.99998 | 3901.6 |
| nbirby_2ND DECK BEAMRIGHT IBEAMS | | | | | | | |
| Begin | -1654.7 | 4511.5 | -6072.1 | i | j | k | dist |
| End | -1619.5 | 4536.8 | -8120.0 | 0.01719 | 0.01234 | -0.99978 | 2048.3 |